

THE DEVELOPMENT OF MEANINGFUL LANGUAGE IN  
LEONARD DOWDY

A Deaf-Blind Pupil at  
Perkins Institution

By

Kathryn E. Maxfield  
with the assistance of Miss Inis  
B. Hall and Miss. Wilma M. Potts.

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## PREFACE

In October, 1932, Leonard Dowdy was admitted to Perkins Institution to be instructed in the Deaf - Blind Department. This department is under the direction of Miss Inis B. Hall, who uses her adaptation of the Tadoma method of instruction to the exclusion of the manual method which she believes should be indefinitely postponed.

There is growing support for the oral method as opposed to the manual for the chief medium of speech for the deaf-blind. Final decision as to whether children without sight and hearing should be introduced to the manual alphabet before they learn vocal speech, shortly after they have established voice techniques, or whether it should be postponed a number of years until speech has become the natural mode of expression, can be reached only after the different techniques have been given ample trial.

The development of a definite program of instruction will be made possible by the evaluation of the different methods on the basis of observations made by those applying them. The data recorded in the present study provide a measure of the progress made where a program has been planned on the theory that the best method of instruction is that which postpones the introduction of the manual alphabet until after the use of vocal speech has been well established.

At the age of twenty-one months, three years before he was brought to Perkins, Leonard, a normal, healthy, active baby, was stricken with what was diagnosed as "brain fever and sleeping sickness" or possibly spinal meningitis. For almost nine weeks he lay in a coma running a temperature between 104 and 105 degrees. When he regained consciousness, it was discovered that he had lost both sight and hearing. According to his mother's estimate he had acquired a spoken vocabulary of between thirty-five and forty words, including proper nouns, before his illness. He had used also simple sentences such as, "Daddy is going to work." His parents permitted him to live as normal a life as possible after his recovery and consciously stimulated his unusual sensitivity to vibrations. Up to the time of his entrance at Perkins at the age of five years and four months, however, he received no speech instruction.

To people who have followed Leonard's development during the past two years his acquisition of oral speech seems little short of marvelous. The study which follows reveals that his spoken, meaningful vocabulary at seven years of age is approximately equal to that of a normal seeing and hearing child of two years, and is probably superior to the spoken, meaningful vocabulary of the average deaf-seeing child of seven years.





## Introduction

In discussing the development of meaningful vocabulary, conceptual as well as spoken, in deaf-blind children it is necessary to bear in mind that until such a child has acquired sufficient language to be taught to read, he has no way of acquiring language incidentally. Only through direct instruction does he learn the meaning and pronunciation of new words. With the presentation of each new word there must be some identifying object or experience which is so closely related to the word that he can make his own associations between the object and the symbol. That is, only through such associations, does he acquire words and groups of words as part of his meaningful vocabulary.

This very handicap in language development does, however, make it possible for the experimenter to check the language growth of a deaf-blind child with a much higher degree of accuracy than is possible with seeing and hearing children. Nevertheless, just how many words a deaf-blind child understands that he cannot speak, is not easy to judge, as he may react to the total meaning of a phrase or sentence without appreciating the meaning of the individual words. He may also understand the meaning of words which he is not yet equipped to pronounce himself. For this reason, it has seemed feasible to attempt a report on Leonard's spoken, meaningful vocabulary only; not on his complete one.

## The Present Study

We have limited ourselves in this report to the following subjects:

1. The size and nature of Leonard's vocabulary, up to June 1, 1934.
2. The extent to which his vocabulary development parallels that of seeing children.
3. His sentence construction -- his free use of words in the development of sentences and the degree of complexity of the sentences.
4. The implications of these findings in relation to the development of methods for instructing the pre-school deaf-blind in the acquisition of vocabulary.

Unless otherwise indicated, we refer only to Leonard's meaningful, spoken vocabulary.

## Survey of the Literature

### Vocabulary development of the deaf-blind

Since few deaf-blind children have been trained during their pre-school years, there have been almost no attempts to study their vocabulary development. In this country, at least, the only studies of which we know are those made by teachers of deaf-blind children at Perkins, only one study, that of Willie Elizabeth Robin, being at all comparable with this one of Leonard. Willie lost her sight and hearing at the age of eighteen months from what was called catarrhal fever, but which may







have been spinal meningitis. She entered Perkins when she was six years and five months old. Willie's acquisition of speech was somewhat complicated by the fact that she was taught vocabulary manually as well as vocally. When she was seven years and six months old, she is said to have known six hundred words manually. Then she was just about seven, she articulated her first word, "mama". Three months later she added two more words, mill and man, to her vocabulary and during the next month we can find a record of six additional words, moo, arm, Emma, Will, Miss, and bad. When she was seven and a half, she articulated her first sentence, "I wash with soap." Within a week she could say ten sentences. In the records, a note is made of the fact that she could speak some thirty or forty words in February, 1892. This was when she was about seven and a half. When Willie was eight and a half, she was said to be articulating almost everything, to be reading from the Fourth Reader, and to be using a typewriter. This, after only two years of instruction.

Just what were considered words we do not know, nor do we know what influence her manual vocabulary had upon Willie's acquisition of oral speech.

Another child, Edith Thomas, lost her sight at the age of four years and her hearing at six. She had, therefore, considerable background in speech before she became deaf and blind. When Edith came to Perkins in January, 1888, she remembered forty-three words, most of them names of objects with which she had immediately to do, such as napkin, orange, tooth. She added words rapidly and according to the record, at the end of six months, she could speak 105 words. (Our count of those given in the record is 126 words.)

Only one other child can be in any way compared with Leonard and that is Thomas Stringer. Tommy lost his sight and hearing when he was four years old. Before that time, he spoke "freely and plainly."

Tommy entered Perkins six months after his illness, but was not given language practice until the following September, almost a year after he lost his sight and hearing. His teacher, Miss Margaret Bull, apparently kept a careful record of his acquisition of language. For the first year he was taught manually. He did not begin to articulate words until December, 1892, when he learned to say papa, mama, Tom, arm, two, and come. The following February he knew 250 words manually and could speak plainly 24. In June, 1893, he used 600 words manually. In May, 1894, when he was seven years and ten months old, he was able to say two sentences.

Helen Keller's acquisition of language is not at all comparable with that of Leonard's because she had had a great deal of manual training before she was introduced to vocal speech, at the age of nine years.







(Sometime it would be interesting to make a study of the comparative value of manual and vocal instruction in the acquisition of language, but such a study is beyond the scope of this report.)

In her study on the emotional expression of a ten-year-old blind-deaf girl, Florence Goodenough mentions the child's vocalizations, but there were no spoken words. A more complete study of the vocal sounds of this child is to be found in the Journal of Genetic Psychology in McCarthy's "Note on the Vocal Sounds of a Blind-Deaf Girl." No meaningful speech is found, however.

If we could compare the language development of deaf-blind preschool children with that of children who are blind only, we should certainly do so. However, so far as we know, a study has never been made of the language growth of a blind preschool child. Such a study will be initiated next year at the Arthur Sunshine Home and Nursery School for the Blind, and it is hoped that similar ones will be made at other nurseries.

Neither have similar studies been made, so far as is known, on the development of spoken, meaningful vocabulary in deaf preschool children. The only evidence we have been able to obtain so far regarding the spoken vocabulary of young deaf children has come to us through correspondence with heads of some of the well known institutions for the deaf in this country. At the Clark School in Northampton, the spoken vocabulary of a seven year old child of average mentality after two years of instruction is considered to be:

Nouns -	125 - 175.	Plurals not counted.	Proper names not
Verbs -	20 - 30.		counted.
Colors -	Used with nouns and in sentences.		
Adjectives -	10 - 15.	Used with nouns and in sentences.	
Pronouns -	10 - 15.		
Simple expressions and connected language.			

Since the average hearing child of seven probably recognizes not more than ten color names, it seems reasonably safe to assume that this is the maximum number included in the spoken vocabulary of this average deaf child. This means that the average child of seven years after two years of instruction at the Clark School knows somewhere between 175 and 245 words.

Part of Leonard's larger vocabulary should undoubtedly be laid to his superior mentality. In spite of the fact that as yet it has not been possible to give him anything resembling a mental test, no one who has had prolonged contact with him entertains any doubts about his having a very high degree of general intelligence. Some of the increased vocabulary, however, may well be credited to the method by which he has







been taught. Leonard's very superiority has made it possible to give a more striking demonstration of the value of the Hall-Tadoma method.

The Principal of the Central Institute for the Deaf in St. Louis wrote that seven year old children in that school did regular second grade work, and had the vocabulary of a hearing seven year old, although the children were not expected to have all the shades of meaning of the words. However, it is not clear that this refers to spoken, meaningful vocabulary which the child is able to use in spontaneous speech.

From other sources we have received the impression that the spoken, meaningful vocabulary of the average deaf seeing child of seven years is not more than 250 words.

#### Seeing preschool children

At the beginning of our study we expected to compare Leonard's vocabulary with that of children of different ages from approximately eighteen months to seven years. However, since most of the vocabularies of children under five years of age have been compiled by experimenting parents or relatives, and since most of these children have had distinctly superior mental ability, we felt that there was little to be gained by comparing Leonard's extent and type of vocabulary with that of seeing children under kindergarten age. In the bibliography a list of studies is given which may afford a valuable background to the understanding of speech development in other children, even though few of these references can be used as a basis for statistical comparison.

In one of the University of Iowa Studies in Child Welfare, called "An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children," Dr. Madorah Elizabeth Smith has made a brief survey of investigations from which we quote a few paragraphs:

#### First Words

It is often difficult to determine the day on which the child first uses a word with meaning, for his babbling sounds frequently take on the form of words although they still do not have meaning for him. Stern and others call these first words "word sentences" for they have for the child the same purpose as whole sentences for adults. Bloch stresses the verbal quality of these words and others have noted their emotional, volitional character.

The age for beginning to talk has been reported for individual children by several observers, and on groups of normal children by a







few investigators, Feldman, Mead, Bateman, and Gosell. The medians reported for normal children vary from twelve to sixteen months, with the girls slightly younger than the boys.

For a time the first words are added slowly. Sometimes there is a period of some months during which practically no progress is made. Stern's found that their children began to ask for the names of objects at eighteen or nineteen months. Stern's believe at this time the child makes the discovery that everything has a name, such a discovery as Helen Keller has so vividly described in the story of her life. The word then changes from a word sentence with a wish or emotional coloring to a true substantiv stage.

### Combinations of Words

Along with the single words a child learns, phrases are often learned as wholes when the child has no idea of the meaning of the separate words. Such combinations of words may be learned almost as soon as single words; but an examination of the data appears to indicate that true sentence forming rarely occurs before the child knows one or two hundred words. It is probable that the time of the appearing of sentences is about the time of the appearance of interest in the names of things. As the child grows older, his sentences gradually become longer and more complex.

### Parts of Speech

The literature that concerns the various parts of speech shows that, although the first words, strictly speaking, may not be classified under parts of speech, the words most commonly found at first are those that in adult usage are interjections and nouns. A little later come verbs, then modifiers, and lastly connectives.

### Factors Determining the Rapidity of Language Development

A variety of factors have been suggested as determining the rapidity of language development.

No positive sex differences have been established, but there is a suggestion that while girls learn to talk earlier than boys, boys surpass girls in size of vocabulary after reaching school age.

The order of birth has been considered as a possible factor affecting development of language, the younger child being supposed to have an advantage over his older brothers and sisters, but the authors who report on two or more children in the same family offer conflicting evidence.







Some data have been collected showing that there is a positive relationship between size of vocabulary and intelligence. Terman declares that the vocabulary test in his scale of mental tests is of "Higher value than any other three tests" in the scale. It seems fairly well established that though there is great variability, the normal child begins to talk much earlier than the feeble-minded child, and the greater the degree of mental defect, the greater is the delay in learning to talk. Other investigators have found positive correlations between class records and size of vocabulary.

It is natural to suppose that a richer, more stimulating environment results in a rapid development of language, and that the children of higher social classes are in advance of those of the lower classes. Dreyer's study of free kindergarten children shows much smaller vocabularies than are shown by other investigators studying their own children; but Dreyer's period of observation is comparatively short. Descombes found so striking a difference in the results of her tests of children of different social classes that she gave separate norms for the two groups she used.

Dr. Smith found difficulty in comparing the data of various observers. To quote from her again: "In the first place, there is a serious error in sampling, because the observers are likely to belong to the professional classes, and they use their own children as subjects. Another difficulty lies in the fact that each observer makes his own rules with regard to the words included. Gale, for example, includes not only words but phrases that are used as separate words; Whipple includes every possible grammatical variant; others include only special variants; and some count a word only once, while others count it once for every part of speech for which it is used. Finally, there is a great variability in the interpretation of 'intelligent use of a word.' Taking all these factors into consideration, it must be granted that when this method of determining the actual number of words in a child's vocabulary is used, the great variability in number is a function not only of individual differences in children, but also differences in the methods of securing and recording the words."

Other studies have not attempted to get exact words used, but have simply made a record of the total number of words.

Dr. Smith's first concern was with the development of a vocabulary test for preschool children which would make it possible to get a fair estimate of a child's vocabulary without the necessity of sitting beside





him many hours at a time in order to catch each new word that he uses. On the basis of the results of her vocabulary tests and on the basis of the data collected by previous investigators, she places among her conclusions the statement that "the average number of words in children's vocabularies increases from 0 at eight months to about 2500 at six yrs." She also concludes that "The most significant factor in increase of vocabulary is that of mental age."

Whereas this last statement is undoubtedly true with regard to seeing and hearing children, those who work with the blind, the deaf, and the deaf-blind, must agree that the barrier imposed by such physical limitations creates a wide hiatus between mental age and normal vocabulary development. In other words, the presence of a major physical handicap throws into relief the importance of experience in the development of mental concepts and therefore of language.

In a study made by Gerlach in which the results of twenty-nine investigators were combined, tentative figures for the size of the average two-year-old's vocabulary were set at 454.56 words and for the average three-year-old's vocabulary at 1608.5 words, a gain of 256% in one year.

### The Present Study

The first two topics upon which we sought information are: the size and nature of Leonard's vocabulary, up to June 1, 1934; and the extent to which his present vocabulary parallels that of seeing children. In this connection we used two lists which represent the average child's vocabulary up to and including six years of age. The first of these is published in the Twenty-Fourth Yearbook of the National Society for the Study of Education, Part I: Report of the National Committee on Reading, pages 186-193, 1925. This vocabulary list, usually known as the Commonest Words List, is based on three investigations, the results of which were pooled. Since the three studies together contain nearly five thousand words, only those were kept which "occurred in three investigations with a total frequency of 15 or more, or in two of the three investigations with a total frequency of 25 or more." The final list of 994 words is called "The Commonest Words in the Spoken Vocabulary of Children up to and Including Six Years of Age."

The second list was prepared by The Child Study Committee of the International Kindergarten Union in 1928 for the use of teachers of the first grade. It is called, "A Study of the Vocabulary of Children Before Entering First Grade," and is published by the International Kindergarten Union, 1201 16th Street N.W., Washington, D.C. For the sake of brevity we shall call it the IKU List.





The words for this list were chosen from three sources: (1) words used by children while attending kindergarten, (2) those used by children when stimulated by pictures, and (3) those used by children in the home. The list contains 2596 words and includes almost all of the words contained in the Commonest Words List. The fifteen in the latter list which are not to be found in the IKU List are given in the following table, together with other forms of the same words to be found in the second list.

Table I. Words in Commonest Words List Not Found in IKU List, and Different Forms of Same Words Found in IKU List

Commonest Words	IKU Form
awake	wake (s)
biscuit	biscuits
boil	
chin	
Heaven	
husband	
Jack	Jack and Jill
	Jack Frost
known	knows
pitcher	
soak	
someone	somebody
	somebody's (poss.)
	somebody's (is)
thirsty	
ticket	
too	toes
whip	

It is apparent from this table that the differences between the two lists are insignificant. If one or the other is to be used as a check list of Leonard's vocabulary development, the IKU List would seem to be the better one of the two since in it the frequencies of occurrence have been figured. The plan for placing a word according to its frequency is that used by Dr. Thorndike and Dr. Horn in their lists. That is:

1. First number gives the thousand in which words occur. Since this list has only 2596 words, only three thousands are indicated. The letter tells whether a word occurs in the first or second five hundred of any thousand. (a) represents the first 500 and (b) the second 500 in any thousand.

2. The second number indicates the hundred of the 500 in which any word occurs. This is given only for the first 500 of the first 1000.





"To illustrate: Word 'a' occurs in the first 100 of the first 500 of the first 1000 in each list. The word 'about' occurs in the second 100 of the first 500 of the first 1000 in the KINDERGARTEN LIST, in the fourth 100 of the first 500 of the first 1000 in the PICTURE LIST, and in the second 100 of the first 500 of the first 1000 in the HOME LIST."

By checking Leonard's addition of new words to his meaningful vocabulary against these two lists, it will be possible to guide his acquisition of language so that he will be equipped with the most important words which are necessary for the expression of ideas, wishes, and questions on the part of small children. It will also be possible to use these check lists as a rough index of Leonard's ability to grasp the meaning of regular first grade reading material.

In getting a numerical record of Leonard's spoken, meaningful vocabulary, we have followed the policy used in the Commonest Words and the IKU Lists for deciding just what was a word. On the assumption that each variation of a word stands for a different concept in the child's mind, the following are listed as separate and distinct words in both of these vocabulary lists: plurals, possessives, inflected forms of the verb, compound words, abbreviated verb forms such as isn't, and a few groups of words which stand for one idea in the child's mind. The IKU List also includes some distinctly childish words, such as ding dong. Proper names are not included in either list except for a few which have geographical, historical, or literary standing such as Jack Frost, Christmas, Indian.

Because of Leonard's inability to acquire words except as they are taught him directly, we feel that we have obtained a practically complete record of his spoken, meaningful vocabulary up to June 1, 1934. Miss Hall has kept a valuable record of his language achievement, and in addition to this we had recourse to an observational record which has been made of Leonard by Miss Potts and Miss Maxfield almost every day since the first of February for approximately an hour until the first of June. Usually the record was made some time between 9:20 and 10:30, depending upon what Leonard happened to be doing upon a given day.

Just to make sure that we had obtained all his vocabulary, we consulted everyone who had close contact with him, especially Miss Leola Thompson, his attendant, and Miss Ruth Keyes who has been observing him since February.

Table II shows Leonard's complete vocabulary including proper names, on June 1, 1934. In all, he knows 410 words. When the proper names have been deducted to make his vocabulary comparable with the IKU List, it is found to contain 387 words.





Table II. Complete Spoken and Meaningful  
Vocabulary of Leonard Dowdy  
June 1, 1934

a	Miss Burnell	day	fourteen
afternoon	Buster	desk	Friday
all	button	dog	
am	bye-bye	doll	
Miss Amanda		door	gave
Miss Amanda's		down	get
amen	cake	drank	girl
an	came	dress	give
and	candy	drum	go
apple	cap	duck	God
arc	car	dust	gone
arm	carried	dusted	good
ate	carry		good-bye
away	cat		good morning
	caught	car	got
	chair	Earl	gum
back	check	cat	gun
bad	cheeks	egg	
bag	chin	eight	
ball	Clifton	eighteen	hair
balloon	coat	elbow	hairbrush
banana	Miss Cobb	eleven	Miss Hall
Miss Barbour	coffee	eye	Miss Hall's
basket	cold	eyes	Miss Hamman
bath	comb		hands
bathtub	combed		hang
bed	came	face	happy
big	cooked	feet	Mr. Hartwell
bit	cookie	fell	has
blow	cookies	fifteen	have
book	cotton	fifty	he
bought	coughed	finger	head
bounce	count	fingers	help
bow v.	country	fish	Miss Helppie
bowed	cover	five	hid
box	cow	flag	hide
boy	cracker	flower	hill
break	cried	flowers	hit
broke	cry	foot	hoe
broom	cup	fork	home
brush	cupboard	forty	hop
brushed	curled	found	horn
bumped	cut	four	horse





hot	leaf	nut	pushed
house	leg	nuts	put
how	Leonard		
how-do-do	Leonard's		
hug	letter	of	rabbit
hugged	like	off	raining
hung	little	on	rake
hurt	lost	one	ran
	love	open	rat
	loves	opened	ride
I		orange	rock
ice-cream		ouch	rode
in	made	out	rolled
into	make	out of	rope
iron	mama	over	
ironing-board	man		
is	many		salt
it	marble	pan	sand
	marbles	papa	sandtable
	march	paper	sat
jar	Miss Maxfield	paste	Saturday
Jo	may	peach	saw
jump	me	pear	seven
jumped	meat	Miss Pierce	seventeen
	milk	pick	shake
	Monday	picked	she
key	money	pie	shoe
keys	month	pin	shook
Miss Keyes	morning	pinched	shoot
kick	mouth	pitcher	shot
kicked	my	play	shovel
kiss		played	showed
kissed		plum	shut
knoc	name	rocket	sick
knock	neck	Miss Petts	sit
knelt	new	powder	six
knife	nine	pretty	sixteen
lap	nineteen	pull	sleep
laugh	no	pulled	smell
laughed	nose	push	smelled





snow	talked	town	walked
snowball	tea	tree	warm
soap	ten	trot	wash
some	thank	Tuesday	Washington
soon	the	turkey	watch
soup	them	twelve	water
spin	they	twenty-eight	we
spoon	thirteen	twenty-five	Wednesday
spun	thirty	twenty-four	week
stand	thirty-one	twenty-nine	well
stop	Miss Thompson	twenty-one	went
stopped	Miss Thompson's	twenty-seven	what
stick	three	twenty-six	where
stockings	threw	twenty-three	whipped
stool	throw	twenty-two	will
store	thumb	twenty	wind
stove	thumbs	two	window
suit	Thursday		window-sill
sun	tie		with
Sunday	to	under	woman
swim	today	unit	women's
swimming	too	up	work
swing	tomorrow	us	
swung	tongue		
	too		
	took	vasc	
table	tooth		yes
Tad	toothbrush		yesterday
take	top	wake	you
talk	towel	walk	your





Table III. Leonard's Vocabulary According to  
Frequency of Words in I.K.U. List

First 500 in First 1000 -	170
First 100 in First 1000 -	57
Second 100 " " " -	39
Third 100 " " " -	27
Fourth 100 " " " -	26
Fifth 100 " " " -	21
Second 500 in First 1000 -	94
First 500 in Second 1000 -	43
Second 500 in Second 1000 -	26
First 500 in Third 1000 -	<u>21</u>
Total -	354

In table III the 354 words of Leonard's vocabulary which are found in the IKU List have been divided according to their frequency of occurrence in that list. It is interesting to see that almost half of these 354 words are to be found in the first five hundred in frequency, and about three-fourths in the first thousand. This proportion would seem to indicate that the words taught him have been wisely chosen.

In table IV which contains the words in Leonard's vocabulary not appearing in the IKU List, most of the words have to do directly with personal experiences which give opportunity for the development of these particular concepts.

Table IV. Leonard's Words not in I.K.U. List

Miss Amanda	Earl	keys	shook
Miss Amanda's	elbow	Miss Keyes	smelled
amen		kissed	spun
	hairbrush	kneel	swung
Miss Barbour	Miss Hall	knelt	
bowed	Miss Hall's		Tad
Miss Burnell	Miss Hamman	Leonard	talked
Buster	Mr. Hartwell	Leonard's	Miss Thompson
	Miss Helppie	loves	Miss Thompson's
check	hid		thumbs
chin	how-de-do	Miss Maxfield	trot
Clifton	hug		
Miss Cobb	hugged	out of	unit
combed			
coughed	ironing-board	Miss Pierce	whipped
curled		pitcher	window-sill
	Jo	Miss Potts	woman's
dusted			





Word lists such as the two which we have employed in this study are most valuable when they are treated by the teacher as criteria for the achievement of the pupil rather than as aims in themselves. Although probably all the words in the Commonest Words and IKU Lists are fundamental to the development of further language growth, it is more important for Leonard to learn words for which he makes a demand whether or not they appear in either of these lists, just so long as his existing vocabulary makes possible a true understanding on his part of the desired words. Reference to word lists should, however, keep before the teacher the need for making opportunities for the deaf-blind child to have the experiences he needs if he is to acquire the background of knowledge which is so important for first grade reading and for social contacts with other children.

Actual parallelism of development between the vocabularies of deaf-blind children and those of seeing, hearing children would seem not only impossible of attainment but almost undesirable. Those who have worked with visually and orally handicapped young people are conscious of the refreshing "difference" in their method of expressing themselves. The very lack of stereotypy in their speech often makes them more socially acceptable because they are more stimulating. To the lay person, this naivete of expression is likely to indicate delightful originality of thought. Whether this is so, or whether it simply indicates lack of experience with slang and other hackneyed forms of expression cannot be judged easily. Certainly the different intellectual and emotional experience of the deaf-blind results in a difference in perspective and concept of the world which might conceivably be of genuine value. For example, the visually and aurally handicapped students at Perkins, including Leonard, seem to have an uncanny ability to "size up" a situation so far as the actual facts are concerned, and then to interpret the situation in a way which is novel to the seeing and hearing people around them, yet in a way which has real point.

#### Leonard's Grammatical Forms of Speech

According to Drever there are three factors which influence child vocabulary -- "environment, direction and development of interests, mental growth or ability to take mental grip of its world. Its environment will affect mainly its nouns, the direction of its interests will be best seen in its verbs and mental grip will be best shown by its pronouns, adverbs, prepositions, and conjunctions."

With Leonard's vocabulary list as we now have it, it is not possible to distinguish in all cases whether the words are nouns or verbs or both, or whether the same word has two meanings. It is suggested that in the future careful record be kept of these details, so that a study may be made of the deaf-blind child's vocabulary development from Drever's point of view.





Observation of Leonard's sentence construction reveals the fact that although he clings rather closely to word groupings as they have been given to him, he nevertheless uses these groupings correctly in varied situations. Toward the end of the year it was interesting to notice in him a growing tendency to make new word groupings. For instance, after he had been telling visitors, "Sit down. Take off your coat," he one day said to me in his cottage, "You take off your coat, come, sit down."

Although Leonard is able to remember long sentences and to repeat them meaningfully, he did not reach the stage of using compound sentences until toward the end of the year. He still talks by preference in short sentences such as, "Clifton went to a store. He bought some candy. He gave it to us. We ate it." He can, however, use rather complicated simple sentences such as "May I put a box of marbles into a cupboard?"

#### Implications of this study

One of the chief values of this study is that it has put on record definite evidence of the fact that five and six year old deaf-blind children can acquire orally a large enough vocabulary to bring them into social contact with seeing and hearing people practically at the beginning of their school careers. Whether every deaf-blind child of preschool age can acquire as many words in as short a time as has Leonard, only the future can tell. We cannot know at present whether even Leonard will continue his rapid rate of language growth or whether, as he meets more complex situations which call for more symbolic and abstract modes of expression, his progress will slow down. The results of the oral method as applied with Leonard are sufficiently startling to warrant further trial with other deaf-blind preschool children, and when possible, with some child who is congenitally deaf and blind.





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(Those starred with \* to be found in Perkins Library)

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